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BANK BRANCHES AND RURAL DEPOSITS IN BANGLADESH

by

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During the last two decades, there has been an upsurge of interest in mobilizing rural financial resources through financial institutions in developing countries. In October, 1984 APRACA organized a workshop in Manila to review the mobilization of rural savings in Asia and Pacific. Along with other country papers, the Bangladesh paper (Mridha) described policies affecting deposit behavior and provided time-series data on the expansion of rural bank branches and volume of deposits mobilized. The paper shows the general trends in mobilization of rural deposits but does not go very far in analyzing the socio-economic factors influencing rural deposits. Because of the several differences that exist across the regions in Bangladesh, a micro-level analysis of rural deposits can contribute to effective policy formulation.

The basic objective of this paper is to provide an analysis of district rural deposit behavior in Bangladesh and specifically to explain the determinants of district rural deposits. In addition, the direction of causality between rural bank branches and deposits is evaluated. Previous studies on rural deposit mobilization assumed one way causality, and used a single equation model to show that bank branches determine rural deposits. In this paper, we demonstrate that there exists simultaneity between bank branches and rural deposits.

Bangladesh emerged as an independent nation in 1971 in a socialistic political environment. All banks, excluding foreign companies, were nationalized under the Presidential Order No. 26 promulgated on March 26, 1972. Besides cooperative banks, in the beginning of 1981, the banking system constituted six nationalized commercial banks, two specialized banks (one for industrial finance; the other for agricultural finance), and seven foreign banks. In 1981-82, a policy change allowed for privatization of banks. By the end of 1984, the country had 21 banks including 13 private and foreign banks, and 2 denationalized commercial banks. Except for the nationalized commercial and specialized banks, all other banks operate only in urban areas.

Table 1 shows the number of bank branches by bank and area for the period 1975-84. Prior to 1975, the rural banking sector was very small. A major change began in 1976 when the government adopted a supply leading strategy of rural finance. All the nationalized commercial and specialized banks were required to open branches in rural areas and to participate in the disbursement of 10 billion taka (US$1 = Taka 30) in rural credit during the period 1976-81. To encourage the nationalized banks to open rural branches, the Bangladesh Bank (Central Bank) adopted a "two-for-one" licensing policy which required commercial and specialized banks to open two rural branches for each new urban branch opened. As a result of the supply-leading strategy and the licensing policy, the number of rural branches increased sharply. In 1975, the total number of rural branches was 729 but

the number increased to 2,932 by 1982. During this period, urban branches increased from 849 to 1,538. The "two-for-one" licensing policy was suspended in 1982 so the number of rural bank branches showed only a marginal increase during the period 1982-84. Thus, it appears that the licensing policy and the supply-leading strategy led to a rapid expansion of rural banking facilities.

The issue now arises, did the expansion of rural bank branches contribute to mobilization of a large amount of rural deposits? Given the availability of cheap funds for rural lending that prevailed up to 1983, one might logically expect a marginal role for rural bank branches in deposit mobilization. But it will be shown below that the expansion of rural bank branches was a major factor contributing to the growth in rural deposits.

Table 2 shows total bank deposits by area during the period 1976-84. Total deposits increased by about six times from 11 billion taka in 1976 to 71 billion in 1984. During this period, rural deposits increased by about 12 times while urban deposits increased by about six times. The percent of rural deposits to total deposits increased from 9.2 percent to 17.1 percent. To adjust for the differences in the number of rural and urban branches in different years, average branch deposits are reported in Table 2. Average deposits per branch increased at about the same rate in both urban and rural branches. Thus, it appears that expansion of bank branches in rural areas led to an increase

in total rural deposits, thereby refuting the neo-classical assumption that rural people cannot save because of their low income.

Does deposit potential in rural areas lead to an expansion in bank branches? Is there competition among banks to mobilize more deposits? Does a large amount of deposits mobilized by one bank in an area induce other banks to open branches in that area? These questions can suggest a simultaneous relationship between bank branches and deposits. Previous studies on rural deposit mobilization assumed one-way causality, thereby ignored the possibility that the availability of deposits influence branch numbers and location. Economic literature argues that competition influences the performance of banks (Gilbert). A simultaneous equations model was used in this study to test for the simultaneity between bank branches and rural deposits (See Khalily et al. for full details). The rural finance literature suggests that several variables influence rural deposits but there are few studies of branch location and bank behavior in developing countries. The variables specified for the bank branch equation were identified based on our observations and the factors considered by the Bangladesh Bank when granting licenses for banks to open new branches.

Two equations were identified, one for rural deposits, and the other for branch expansion, as follows:

$$D_i/POP = f(PYP, PYT, BF, RT, L, P)$$

$$BF = f(D_i/POP, PYP, P, RT, PCR)$$

where:

D_i/POP = Per capita district interest-bearing deposits;

PYP = Per capita district permanent income

PYT = Per capita district transitory income

BF = Number of district rural bank branches per 1,000 inhabitants

L = District literacy rate

P = District rural inflation rate

RT = District roads and vehicles index

PCR = Per capita district rural loans outstanding

It was hypothesized that except for inflation, permanent and transitory income, bank branch density, the roads and vehicles index and literacy positively influence interest bearing deposits. Bank branch density and the roads and vehicles index were used in the deposits equation as a proxy for transaction costs. It is frequently argued that reduced transaction costs for depositors increases demand for interest-bearing deposits. On the other hand, the expansion of bank branches is positively determined by deposit volume, permanent income, the roads and vehicle index and the volume of rural loan outstanding, and negatively by inflation.

The model was fitted to pooled district level data for 1983 and 1984, obtained from the Bangladesh Bank data tape and the Statistical Yearbook, 1985. The Two Stage Least Squares technique was used to estimate the coefficients of the parameters. The results of the model are shown below:

$$\ln(D_{i/POP}) = \underset{(0.884)}{6.06^{**}} + \underset{(0.083)}{0.057\ PYP} + \underset{(1.26)}{2.40^{**}\ PYT} + \underset{(0.849)}{0.185^{***}\ L}$$

$$+ \underset{(0.230)}{0.058\ P} + \underset{(1.785)}{0.985^{*}\ BF} + \underset{(2.33)}{.219^{*}\ RD}$$

$$\ln(BF) = \underset{(-12.762)}{-7.893^{*}} + \underset{(3.096)}{0.478^{*}\ PYP} - \underset{(-3.591)}{0.155^{*}\ P} + \underset{(0.294)}{0.022\ RD}$$

$$+ \underset{(1.487)}{0.107^{**}\ PCR} + \underset{(1.624)}{0.158^{*}\ D_{i/POP}}$$

Note: * Significant at 0.05 level;
** Significant at 0.10 level;
*** Significant at 0.20 level;
Figures in parentheses indicate t-value.

The signs of the coefficients in both equations are as expected. Except for permanent income and inflation, all other variables are significant in the deposit equation, while in the branch density equation, only the roads and vehicles index is not significant.

The significant cross-coefficients of bank branch and interest bearing deposits confirm the simultaneity between bank branch density and deposits. The coefficient for bank branches in the interest-bearing deposit function was estimated as 0.985, significant at the 0.05 level, while in the bank branch density function, the interest-bearing deposit coefficient was estimated as 0.158, significant at the 0.10 level.

CONCLUSION AND POLICY IMPLICATIONS

The empirical evidence in this paper supports the hypothesis of simultaneity between bank branches and deposits. This implies that not only does expansion of bank branches influence deposits, but deposits also contribute to branch density. Thus, contrary to the traditional belief in some developing countries that bank

competition leads to wastage and inefficient allocation of resources, it is expected that competition in the banking sector will provide better opportunities and services to depositors. There are few significant studies, however, that analyze the level of competition and performance of the banking sector in developing countries. APRACA can play a useful service by stimulating research to evaluate and analyze the issue of bank competition and performance.

The significant coefficients for branch density and the roads and vehicles index support other research which concluded that transaction costs are important in explaining rural deposit behavior. The expansion of rural bank branches and roads and vehicles reduce transaction costs for depositors by reducing commuting distance to banks and by saving time in making bank transactions. This, in turn, increases demand for deposits. For lack of household level data, only the indirect measures of bank branch density and roads and vehicles were used as proxies for transaction costs. These proxies may underestimate the significant role of banks in providing rural financial services. Research needs to be undertaken to explicitly measure the impact of transaction costs on banking versus the complete role of bank branches in providing rural financial services.

The results of the bank branch equation support the argument that economic variables affect the distribution of rural bank branches. Although the branch network reduces transaction costs for deposits, the question arises about the viability of rural

bank branches. The World Bank found that a large number (66 percent) of the Nationalized Commercial Bank branches were not viable. Cost-benefit analysis needs to be done in terms of the volume of deposits and loans handled by a rural branch. Efforts should also be made to explore the ways to reduce the costs of operating rural branches. Excessive costs may jeopardize endeavors to mobilize rural deposits.

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Table 1

NUMBER OF RURAL AND URBAN BRANCHES OF SCHEDULED BANKS
1975-84
YEAR ENDING JUNE 30

Banks	Year										Average Growth of Branches (Percent)
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	
Nationalized Commercial Banks:											
Rural	648	743	949	1505	1822	2103	2323	2383	2321	2413	16.9
Urban	762	833	917	1030	1144	1231	1373	1414	1419	1424	7.3
Specialized Banks:											
Rural	81	85	104	129	179	334	473	549	729	812	30.9
Urban	73	74	74	75	83	92	99	101	102	102	3.9
Foreign and Private Banks:											
Rural	--	--	--	--	--	--	--	--		--	--
Urban	14	15	18	20	20	19	21	23	44	81	26.4
All Banks:											
Rural	729	828	1053	1634	2001	2437	2796	2932	3050	3301	19.1
Urban	849	922	1009	1125	1247	1342	1493	1538	1565	1684	8.0

Source: Scheduled Bank Statistics, 1976-1985, Bangladesh Bank.

Table 2
Total Bank Deposits, 1976-84
By Rural and Urban Area
Year ending June 30

YEAR	AREA							
	RURAL			URBAN			TOTAL	
	Deposits a/	Percent	Average Branch Deposits a/	Deposits a/	Percent	Average Branch Deposits a/	Deposits a/	Average Branch Deposits a/
1976	1,063	9.0	1.3	10,531	90.9	11.4	11,594	6.6
1977	1,552	10.8	1.5	12,901	89.2	12.8	14,453	7.0
1978	2,316	13.3	1.4	15,161	86.7	13.5	17,477	6.3
1979	3,540	15.4	1.8	19,391	84.6	15.6	22,932	7.1
1980	5,041	17.4	2.1	24,027	85.6	17.9	29,068	7.4
1981	5,599	15.9	2.0	29,637	84.1	19.9	35,236	8.2
1982	5,938	15.4	2.0	32,563	84.6	21.3	38,501	8.6
1983	8,544	16.8	2.8	42,437	83.3	27.1	50,980	11.1
1984	12,215	17.1	3.7	59,369	82.9	35.9	71,584	14.4
Average growth percent	36.7		15.1	24.4		15.4	25.9	10.8

a/ Million taka

Source: Bangladesh Bank Bulletin, February, 1985.

Scheduled Banks Statistics, 1976-84, Bangladesh Bank